



March 31, 2005

Mr. Dan Schulse  
President  
Universal Minerals, Inc.  
6319 Brookhill Drive  
Houston, Texas 77087

Subject: Radiation Survey of Mineral Samples  
Ruby Garnet 80, 36, 16  
TGE Project No. 05-0347

Dear Mr. Schulse:

As requested by you on March 30, 2005, TGE performed preliminary real-time testing of samples of materials shown to TGE during the site visit on March 31, 2005. A Ludlum Model 3 Survey Meter with serial number 86767 was used to collect real time readings. The instrument was last calibrated on April 28, 2004. Record of calibration is attached to this letter.

Prior to collecting readings from mineral samples, TGE collected background readings within the office and warehouse. Such readings were found to range between 6 and 7  $\mu$ R/hour in the office and 7 to 8  $\mu$ R/hour in the warehouse.

Provided below in tabulated form are  $\mu$ R/hour readings for each material presented to TGE at the subject facility on the date of this letter.

Material	$\mu$ R/Hour
Ruby Garnet 80	6 to 7
Ruby Garnet 36	6 to 7
Ruby Garnet 16	7

Per 25 Texas Administrative Code or TAC 289.259(d)(5)(C) the following materials are listed as being exempt: **material used for building construction, industrial processing, sand blasting, metal casings, or other NORM in which the radionuclide content has not been concentrated to higher levels than found in its natural state.**

Given the above-referenced exemption from regulation in Texas, and the likely intended use of the material for blasting and/or industrial processing, the samples presented to TGE for testing do not appear to require special handling or management when in storage at the current warehouse facility.

Additionally, per 25 TAC 289.259(d)(2) "Materials and equipment in the recycling process contaminated with NORM scale or residue not otherwise exempted are exempt from the requirements of this section if the maximum radiation exposure level does not exceed 50 microrentgens per hour ( $\mu$ R/hr) including the background radiation level at any accessible point."

Additionally, OSHA regulations (1910.1096(b)(1)) states that "... no employer shall possess, use, or transfer sources of ionizing radiation in such a manner as to cause any individual in a restricted area to receive in any period of one calendar quarter from sources in the employer's possession or control a dose in excess of the limits specified in Table G-18." This table is provided below:

Areas of Potential Exposure	Rems per calendar quarter
Whole body: Head and trunk; active blood-forming organs; lens of eyes; or gonads	1 1/4
Hands and forearms; feet and ankles	18 3/4
Skin of whole body	7 1/2

Obviously, it is not likely that employees of Universal Minerals would approach doses of levels indicated. Given that the materials stored in the warehouse contain naturally occurring radioactive material, it would be prudent if all employees were monitored on a regular basis using dosimetry procedures.

Per 1910.1096(b)(2)(iii), the employer must maintain adequate past and current exposure records which show that the addition of such a dose will not cause the individual to exceed the amount authorized. A copy of the OSHA regulations pertaining to ionizing radiation are attached to this letter.

**Summary of Recommendations:**

- Establish in-house specifications for shipments from suppliers and provide a copy of such specifications to suppliers before materials are shipped to Universal Minerals.
- Test in-coming materials for radiation levels prior to accepting such shipments, if possible.
- Perform personal monitoring following OSHA requirements (use of dosimeters on personnel handling such materials) and retain copies of exposure records.

**Limitations:**

Although the scope of services for this investigation included preliminary and limited testing and no media (bulk) laboratory analysis, it is possible that additional unrecognized contamination may exist within materials tested and radiation levels may vary with different batches and bags of materials.

Our professional services have been performed, our findings obtained and our recommendations prepared in accordance with customary principles and practices in the field of environmental industrial hygiene. This company is not responsible for independent conclusions, opinions or recommendations made by others based on the field sampling and laboratory test data presented in this report.

We appreciate the opportunity to provide you with these services. If you have any questions or comments about this report please contact us at your convenience.

Very truly yours,  
**TGE Resources, Inc.**

Robin D. Franks, RSO, P.G., CHMM  
President, TGE Resources, Inc.

RDF/hkd  
attachments